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THE NEXUS BETWEEN FOREIGN DIRECT INVESTMENT AND INDUSTRIALISATION. A PANEL ANALYSIS OF THE ECONOMIC COMMUNITY OF WEST AFRICAN STATES (ECOWAS)

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ABSTRACT

Foreign direct investment and industrialization are powerful tools that can transform economies and aid in the attainment of selected Sustainable Development Goals. This study aimed to examine the relationship between foreign direct investment and industrialization in the ECOWAS trading bloc. Drawing on panel data from 1975–2022, sourced from the World Bank portal, the study employed a panel auto-regressive distributive lag model. Research findings depicted that foreign direct investment had a negative effect on industrialization. Primary research findings found that ECOWAS suffers from low industrialization and FDI levels. In the short run, it was observed that GDP per capita positively influenced industrialization levels in the ECOWAS region. In the long run, trade and gross fixed capital formation positively impacted industrialization levels. In terms of policy implications, it was suggested that there is a need for ECOWAS to craft and implement robust trade policies, solve governance issues, and increase investment in gross fixed capital.

KEYWORDS: Foreign Direct Investment; Industrialisation; Poverty; Regional Trade; Sustainable Development Goals.

JEL classification: B22; E22; F21

1. INTRODUCTION

This paper examines the link between foreign direct investment (FDI) and industrialization in the Economic Community of West African States (ECOWAS). The ECOWAS trading bloc was established in 1975 and comprises 16 countries, for example: Niger, Nigeria, Ghana, Togo, Liberia, Burkina Faso, Senegal, and others [1]. The [2] defines FDI as direct investment equity flows in the reporting economy. This trading bloc has been struggling to attract meaningful FDI levels for the past 49 years [3]. For example, Niger recorded a drop in FDI levels from US$1.07 billion in 2011 to US$360 million [4]. It is important to note that in 2018, an ECOWAS investment policy was implemented, and the blueprint targeted improving FDI inflows in the region [5]. However, to date, no meaningful FDI has been attracted by the ECOWAS region, and this signals that the region requires more than policy documents to attract the much-needed increase in investment levels. FDI is crucial for enhancing economic growth and improving industrialization levels. Countries, such as Singapore, Hong Kong, and Brazil recorded high FDI inflows and industrialization levels during the 1990s [6]. This shows the positive link between FDI and industrialization.

Industrialization is defined as a socio-economic process that includes 'a rapid transformation in the significance of manufacturing activity in relation to all other forms of production and work undertaken within national (or local) economies'[7] Industrialization also entails a shift from an agrarian economy to an economy that uses modern technology [8, 9]. Most of the ECOWAS member states suffer from low levels of industrialization and other macroeconomic challenges, such as unemployment, poverty, and low economic growth [10,11,12].

It is known that FDI can have both positive and negative effects on industrialization; however, in the case of ECOWAS, it is unknown because no empirical research has tested that relationship [13, 14,15,16]. The research, therefore, seeks to examine the relationship between FDI and industrialization. Other objectives of the study are to preview and describe the FDI levels in ECOWAS, and to preview and describe industrialisation levels in ECOWAS.

The research is worth pursuing in that if the ECOWAS improves its FDI- and industrialization levels, it may attain some of the selected Sustainable Development Goals (SDGs), such as poverty reduction (Goal 1), zero hunger (Goal 2), decent work and economic growth (Goal 8), and industrial innovation (Goal 9) (United Nations, 2024). In addition, good economic performance of ECOWAS may help reduce forced migration to developed and developing economies, which in turn creates geopolitical tensions [17]. This is supported because several Africans have been migrating to Europe and other countries in search of greener pastures [18].

Finally, the good performance of the ECOWAS trading bloc will assist to meet the goals of the United Nations Conference on Trade and Development, such as solving macro-economic challenges and fostering economic development through trade. The rest of this paper is structured as follows: the next section discusses a theoretical and empirical literature review. The study uses the institutional FDI fitness theory. The research methodology is presented in Section 3. Results are presented in Section 4, and discussion of the findings under Section 5. Finally, conclusions are presented in Section 6.

2. LITERATURE REVIEW

2.1. Theoretical Literature Review

This section presents the theoretical literature review. The study uses the institutional FDI fitness theory.

2.1.1. Institutional FDI Fitness Theory

[19] coined the phrase "FDI fitness," which refers to a country's capacity to attract, accept, and hold onto foreign direct investment. The idea is to explain why foreign direct investment flows are distributed unevenly among countries [20]. ECOWAS member states have varying FDI levels, which have a bearing on the associated industrialization levels.

According to the theory, a nation's capacity to draw in, accept, and hold onto foreign investments rests on its capacity to foster an environment that attracts investors when their needs and expectations are satisfied [21,22]. This theory is relevant to this study as ECOWAS economies have diverse environments that affect FDI inflows. For example, Nigeria is affected by the Boko Haram insurgency, Niger suffers from political instability, and Benin has an irregular electricity supply [23, 24,25]. All these factors have an impact on FDI and industrialization levels.

To elaborate, institutional fitness was regarded by [26] because of financial, economic, and political considerations. Financial factors include foreign debt and foreign debt services, liquidity, and exchange rate stability, while political factors include government stability, democratic accountability, socio-economic conditions, investment profile,

internal and external conflict, government corruption, and the rule of law [26]. All the above-mentioned factors have adversely impacted ECOWAS; therefore, this theory is useful to explain FDI dynamics in this study.

2.2. Empirical Literature Review

This section presents the links between FDI and industrialization.

2.2.1. Characterisation of FDI And Industrialization

Several scholars have researched the link between FDI and industrialization; however, the general impact of foreign direct investment on the economies of receiving countries is a matter of debate, with no consensus [27,28]. [29] concluded that FDI positively affects industrialization, as the foreign companies that bring in FDI often invest in modern technology needed for industrialization. These research findings are also supported by [30] who established that FDI helps improve economic growth in the context of South Africa.

On the contrary, according to [31] local industries may suffer from a reduced market share of domestic firms due to greater rivalry with the entry of foreign firms. This adversely affects industrialization as foreign firms may offer lucrative wages, affecting infant industries in the host economy. This is also supported by [32] who established the negative effect of FDI on industrialization in Sri Lanka. The above discussion suggests that the effects of FDI on industrialization can be positive or negative.

Several factors impact FDI levels in an economy; some are peace and stability, good governance, and a stable macro-economic environment. [33] supports the above assertion in a study focused on the determinants of FDI inflows to ECOWAS member countries. The results of the study indicated that the primary drivers of FDI in the ECOWAS region were natural resources, government consumption expenditure, domestic credit to the private sector, interest rates, gross fixed capital formation, exchange rates, and the economic freedom index. These factors all relate to the macro-economic environment in ECOWAS [33].

A bad macro-economic environment limits the effectiveness of FDI in improving industrialization. [34,35] support the above assertion and mention that FDI effectiveness depends on the prevailing economic conditions in a country. For example, some of the ECOWAS member states, such as Nigeria and Niger, have been facing political instability, and this adversely affects FDI inflow as investors may not be keen to invest in such unstable environments.

[36] used a generalized method of moments to examine the link between human capital, FDI, and economic growth in ECOWAS. Research findings depict that the rate of human capital development and FDI levels affect economic growth for the economies that fall in the ECOWAS trading bloc. It was found that FDI encouraged the transfer of technology and skills, which boosts economic growth and productivity [36]. These research findings indicate the importance of FDI in achieving other macro-economic objectives of the trading bloc at large. However, ECOWAS's capacity to attract FDI is adversely affected by factors, such as poor governance and conflict, as previously discussed.

[37] examined the use of FDI in job creation and industrialization in Africa. Research findings illustrate that African economies fail to attract FDI due to poor infrastructure, poor trade and FDI policies, irregular energy supply, and poor border control mechanisms [37]. These research findings show the bad state of the economic conditions of African economies. [34,35,37] share similar research findings of the impact of economic conditions on FDI and industrialization. African economies must therefore, address these challenges to improve their capability of attracting FDI and increasing industrialization levels.

[38] used a systematic, generalized method of moments to determine the factors that impact FDI in ECOWAS. The study's conclusions describe that non-economic factors, such as agglomeration economies, regime shifts, legal origin effects, and economic fundamentals like market size, trade openness, and human capital, are major drivers of the region's overall FDI flow [38].

All these factors affect FDI and, ultimately, industrialization. In addition, it was pointed out that low institutional quality and an excessive reliance on rent from natural resources hinder FDI flow into the region. This implies that attracting FDI for ECOWAS requires a holistic approach, as several factors must be considered. However, this research investigated the determinants and did not include the relationship between FDI and industrialization, which reflects a research gap that this study seeks to close.

3. MATERIALS AND METHODS

The methodology section is based on arguments from the institutional FDI fitness theory, as it indicates the link between industrialization and FDI. An econometric model and a brief description of the variables used are presented. The dependent variable is industrialization and was measured using

manufacturing value-added as a percentage of GDP. Four independent variables were used, namely foreign direct investment (FDI), trade (TR), gross fixed capital formation (GFC), and GDP per capita (GDPC).

Foreign direct investment was added as a variable because companies injecting FDI often bring modern technology and sophisticated machinery used in the manufacturing sector, both of which improve industrialization levels [29,6]. FDI was measured using the current US dollar. Trade was also added as a factor because it leads to structural transformation, enabling increased economic growth and industrialization, as resources move to highly productive sectors [39,40].

GFC positively influences industrialization as investors often opt to invest in economies with good road and railway infrastructure for transport purposes. This enables the movement of goods from diverse industries and supports other economic growth initiatives [41,42] measured as a percentage of GDP. Finally, GDP per capita measures the economic output of an economy per person. It is also used to proxy income levels and is regarded as a major element of the big push industrialization theory [14,43,44,45].

3.1. Model

The research adopted the panel autoregressive distributed lag model (PARDL) developed by [46] to test the effects of FDI on industrialization. Data were collected for ECOWAS member states which are Benin, Burkina Faso, Cabo Verde, Côte D'Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Mali, Niger, Nigeria, Senegal, Siera Leone and Togo. Liberia was excluded due to data unavailability. The period covered in the study was from 1975 to 2021.

This model was selected because it enables the estimation of short-run and long-run parameters and is regarded as a useful model in panel analysis [47, 48]. PARDL was used because it reduces the chances of spurious regression [49]. In addition, the use of the panel estimation technique was deemed useful for the study because it enabled the control of heterogeneity and robust estimation [50] (The PARDL is applicable when the variables are integrated into orders 1 and [51, 48]. Finally, the use of PARDL in this research was useful because it mitigated issues of simultaneous bias, which is a key form of endogeneity [52].

The general model is stated below:

$$\Delta Y_{i,t} = \alpha_1 + \sum_{i=1}^{p} \beta_i \Delta Y_{i,t-i} + \sum_{i=0}^{q} \delta_i \Delta X_{i,t-i} + \varphi_1 Y_{i,t-1} + \varphi_2 X_{i,t-1} + \varepsilon_{it} \quad (1)$$

Where $\Delta \boldsymbol{Y_{it}}$ represents industrialization, Δ captures differences in the operator, $\boldsymbol{X_1}$, $\boldsymbol{y_1}$ are the independent variables which were: FDI, TR, GFC and GDPC. $\boldsymbol{\beta_i}$ and $\boldsymbol{\delta_i}$ represents the short-run coefficients of the model explaining the short-run relationships between the variables, $\boldsymbol{\varphi_1}$, $\boldsymbol{\varphi_2}$ represents the long-run relationship, p and q represent the lags of the dependent variable and the independent variables, respectively, and $\boldsymbol{\varepsilon_{it}}$ is the error term.

Summary Of the Dataset

This section presents a summary of the dataset. The panel data used in this research was from 1975 to 2021. Missing data was calculated using interpolation.

Table 1: Summary Of the Data Set.

Variable	Indicator	Variable description	Data source
Industrialisation (IND)	Manufacturing value added (% GDP)	Value added is the net output of a sector after adding all outputs and subtracting intermediate inputs.	World Bank (2024)
Foreign direct investment (FDI)	Current US$	An aggregated value comprising equity capital, reinvestment of earnings, and long-term and short-term capital.	World Bank (2024)
Trade (TR)	Percentage of GDP	Trade is the sum of exports and imports of goods and services measured as a share of gross domestic product.	World Bank (2024)
Gross fixed capital formation (GFC)	Current US$	Gross fixed capital formation (formerly gross domestic fixed investment) includes land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings	World Bank (2024)
GDP per capita (GDPC)	Current (US$)	GDP per capita is gross domestic product divided by midyear population.	World Bank (2024)

Table 1 shows the list of variables in the first column, indicator in the second column. The third column shows the variable description and the last column shows the data source.

4. RESULTS

This section is the discussion of the results. The first section is based on the analysis of the FDI and industrialization levels for ECOWAS. In Figures 1 and 2, Period 1 refers to 1975–1990, Period 2 to 1991–2006, and Period 3 to 2007–2021. This was to simplify the analysis.

Figure 1 below shows that in Period 1, all the countries that fall within the ECOWAS region had FDI levels below 10%. Key to note is that Benin had a negative FDI value in Period 1. Burkina Faso was the only country that had over 10% of its FDI levels. In Period 2, all ECOWAS member states had low FDI levels below 10%. However, comparing Period 1 to Period 2, there was a slight increase in FDI levels for the region generally. In Period 3, there were sharp fluctuations for most of the ECOWAS member states. Cabo Verde recorded the highest FDI levels, estimated at 30%. An outlier was Sierra Leone that recorded a negative US$950477791. The remaining economies had FDI values below 20%. Overall, in Period 3, the ECOWAS recorded low FDI levels.

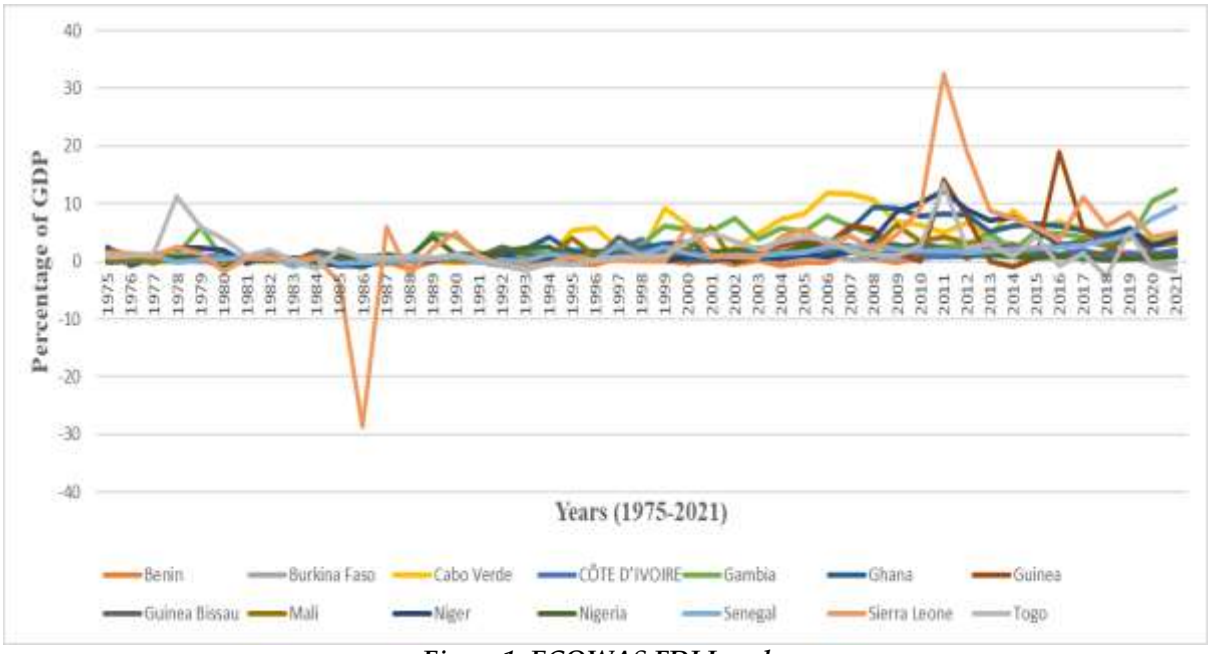

Figure 1: ECOWAS FDI Levels.
Source: Researcher's Construct Based on World Bank Data (2024).

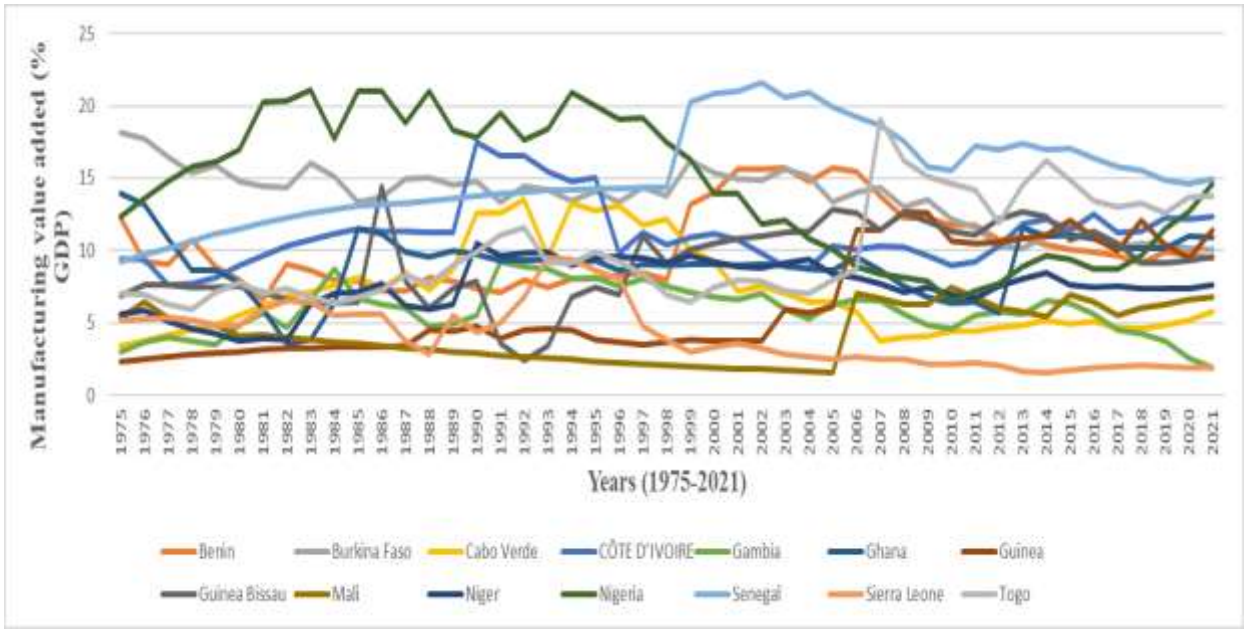

Figure 2: ECOWAS Industrialization Levels.
Source: Researcher's Construct Based on World Bank Data (2024).

Figure 2 above shows that in Period 1, Nigeria, Burkina Faso, Côte d'Ivoire, and Senegal recorded the highest levels of industrialization, though their values were below 20%. The remainder of the ECOWAS economies recorded fluctuating industrialization levels that ranged from an estimated 3% to 15%. The least-performing ECOWAS economies in the first period were Guinea, Mali, and Sierra Leone.

Overall, the entire ECOWAS trading bloc recorded low industrialization in the first 15 years. This can be explained by the many countries majoring in the extractive industries with little on the manufacturing side. In Period 2, there were sharp fluctuations in all 14 economies in the ECOWAS region. Nigeria recorded a nosedive in industrialization levels in Period 2. Guinea and Mali were the lowest-performing economies between 1991 and 2006. Overall, most of the economies recorded industrialization levels above 5% but not more than 15%.

4.2 Descriptive Statistics

This section presents the descriptive statistics.

Table 2: Descriptive Statistics.

Variables	IND	FDI	TR	GFC	GDPC
Mean	9.14	325 000 000	2.33	1090000000	725.07
Median	8.85	28528008	63.60	274000000	506.91
Maximum	21.58	8840000000	9.38	17200000000	3903.05
Minimum	1.53	-739000000	-2.06	-2424358	124.22

Table 2 shows that the mean for IND was 9.14%, the median was 8.85%, the maximum was 21.58%, and the minimum was 1.53%. FDI had a mean of US$325 000000, a median of US$28528008, a maximum of US$8840 000000, and a minimum of -US$790 000000. TR had a mean of 2.33%, a median of 63.60%, a maximum of 9,38%, and a minimum of -2.06%. GFC had a mean of US$1090 000000, a median of US$274 000000, a maximum of US$17200 000000, and a minimum of -US$2424358. Finally, GDPC had a mean of US$725.07, a median of US$506.91, a maximum of US$3903.05, and a minimum of US$124.22.

4.3 Correlation Analysis

This section presents the correlation analysis.

Table 3: Correlation Analysis.

Variables	IND	FDI	TR	GFC	GDPC
IND	1.00				
FDI	0.05	1.00			
TR	0.32	0.11	1.00		
GFC	0.04	0.28	-0.13	1.00	
GDPC	0.13	0.45	0.16	0.44	1.00

Table 3 indicates that the correlation between FDI and IND was positive at 5%, while TR and IND were positively associated at 32%. GFC and IND were positively correlated at 4%. GDPC and IND were positively related at 13%. TR and FDI, GFC and FDI, and GDPC and FDI were all positively correlated at 11%, 28%, and 45%, respectively. GFC and TR, GDPC and TR were correlated at -13% and 16%, respectively. Finally, GDPC and GFC were positively correlated at 44%. Overall, all values were less than 0.7, indicating no serious multicollinearity (Duda, 2022).

4.4 Unit Root Tests

The Augmented Dickey-Fuller test, Phillips-Perron test and IM, Pesaran and Shin were used to test for unit root in the research.

Table 4: Unit Root Tests.

	ADF test		PP test		IM, Pesaran and Shin test	
Variable	**Level**	**1st Diff**	**Level**	**1st Diff**	**Level**	**1st Diff**
IND		**(239.59)** 0.00		**(423.25)** 0.00		**(-14.33)** 0.00
FDI		**(236.12)** 0.00		**(431.89)**0.00		**(12.41)**0.00
TR	**(39.13)** 0.00		**(40.66)** 0.00		**(16.03)** 0.00	
GFC		**(218.68)** 0.00		**(343.15)** 0.00		**(-13.13)** 0.00
GDPC		**(248.47)** 0.00		**(333.59)** 0.00		**(-14.75)** 0.00

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Table 4 reflects that IND, FDI, GFC, and GDPC were stationary at the first difference. TR was stationary at the level. This suffices for the condition of running a PARDL, which stipulates that variables should be stationary at the level and first difference. All the unit root tests used in this study confirmed that the series was stationary.

4.5 Lag Length Selection

The VAR model was used to determine the optimal lag length in this study.

Table 5: VAR Model for Optimal Lag Selection.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-42426	NA	2.90	155.71	155.71	155.72
1	-38506	7753	1.80	141.41	141.65	141.50
2	-38474	62.74	1.75	141.39	141.82	141.56
3	-38434	77.70	1.66	141.33	141.96	141.58
4	-38390	84.41	1.55	141.26	142.09	141.59
5	-38358	59.57	1.51	141.24	142.26	141.64
6	-38335	44.35	1.52	141.25	142.47	141.72
7	-38284	95.77	1.38	141.15	142.57	141.70
8	-38224	111	1.21	141.02*	142.64	141.65

The Akaike criterion was used for decision purposes on the appropriate lag length. Table 5 shows that Lag 8 was selected because it had the lowest AIC value of 141.02.

To test for co-integration, the Pedroni Residual co-integration test was used. The results are presented below.

4.6 Panel Co-Integration Test

Table 6: Pedroni Co-Integration Test Results.

	Statistic	P-value	Weighted statistic	P-value
Panel v-statistic	-0.74	0.77	-1.04	0.85
Panel rho-statistic	0.58	0.72	0.68	0.75
Panel PP-statistic	-1.58	0.06*	-1.78	0.03***
Panel ADF -statistic	-2.46	0.00***	-3.00	0.00***
Group rho-statistic	1.88	0.97		
Group PP- statistic	-2.65	0.00***		
Group ADF- statistic	-3.07	0.00**		

*****, ** And * Stand for Significance at the 1%, 5% And 10% Levels, Respectively**

Table 6 above shows that there was no co-integration because 5 equations had p-values less than the 5% significance level, while 6 equations had p-values over 5%. Therefore, 6 is greater than 5, and it is concluded that there is no panel co-integration among the variables used in the study, which were industrialization, foreign direct investment, trade, gross fixed capital formation, and GDP per capita.

4.7 Panel Causality

The Dumitrescu and Hurlin test were used to test for panel causality [53]. The results are presented below.

Table 7: Dumitrescu And Hurlin Test Results.

Equation	Null Hypothesis	W-Statistics	Probability
1a	FDI does not homogeneously cause IND	2.39	0.62
1b	IND does not homogeneously cause FDI	2.91	0.17
2a	TR does not homogeneously cause IND	4.09	0.00
2b	IND does not homogeneously cause TR	3.77	0.00
3a	GFC does not homogeneously cause IND	3.21	0.06
3b	IND does not homogeneously cause GFC	2.96	0.07

4a	GDPC does not homogeneously cause IND	3.97	0.00
4b	IND does not homogeneously cause GDPC	3.17	0.07
5a	TR does not homogeneously cause FDI	9.87	0.00
5b	FDI does not homogeneously cause TR	2.86	0.19
6a	GFC does not homogeneously cause FDI	11.83	0.00
6b	FDI does not homogeneously cause GFC	7.38	0.00
7a	GDPC does not homogeneously cause FDI	7.82	0.00
7b	FDI does not homogeneously cause GDPC	6.14	9E-12
8a	GFC does not homogeneously cause TR	2.75	0.27
8b	TR does not homogeneously cause GFC	3.25	0.05
9a	GDPC does not homogeneously cause TR	4.81	5.E-06
9b	TR does not homogeneously cause GDPC	8.63	0.00
10a	GDPC does not homogeneously cause GFC	4.95	2.E-06
10b	GFC does not homogeneously cause GDPC	8.39	0.00

Equations 1a and 1b have p-values of 0.62 and 0.17 that were above the 5% level, and it is concluded that FDI does not homogeneously cause IND and vice versa. These were the key variables in the research, and it can be concluded that FDI does not have an influence on IND. Equations 2a and b had p-values less than 5%, and it can be concluded that TR does homogeneously cause IND and vice versa. This shows bi-directional causality. Equations 3a and b had p-values of 0.06 and 0.07, and they were greater than 5%. This means that GFC does not homogeneously cause IND, and IND has no influence on GFC. Equation 4a had a p-value of 0.00, which is less than 5%, and it is concluded that GDPC does homogeneously cause IND. However, equation 4b had a p-value greater than 5%, and it is concluded that IND does not homogeneously cause GDPC. Overall, there is a unidirectional causality between GDPC and IND.

Equation 5a had a p-value less than 5%, and it was concluded that TR does homogeneously cause FDI. However, equation 5b had a p-value greater than 5%, and this shows that FDI does not homogeneously cause TR. Based on equations 5a and b, there is bidirectional causality between TR and FDI. Equations 6a and b, the p-value is less than 5%, and it is concluded that GFC does not homogeneously cause FDI and vice versa. This shows bidirectional causality.

Equation 7a had a p-value less than 5%, which means that GDPC does homogeneously cause FDI. Equation 7b had a p-value greater than 5%, thus it is concluded that FDI does not homogeneously cause GDPC. Equation 8a had a p-value greater than 5%, and it was concluded that GFC does not homogeneously cause TR. However, Equation 8b had a p-value equal to 5%, which implies that TR does homogeneously cause GFC. Equation 9a had a p-value greater than 5%, and it was concluded that GDPC does not homogeneously cause TR. However, Equation 9b had a p-value below 5%, and this implied that TR does homogeneously cause GDPC. Overall, there is bidirectional causality in these equations. Equation 10a had a p-value greater than 5%, and it was concluded that GDPC does not homogeneously cause GFC. Finally, Equation 10b had a p-value below 5%, and it was concluded that GFC does homogeneously cause GDPC.

4.8 Panel Auto-Regressive Distributed Lag Results

This section presents the results of the panel auto-regressive distributed lag model.

Table 8: PARDL Long-Run Results.

Variable	Coefficient	t-statistic	Probability
FDI	-1.53	-3.12	0.00***
TR	5.42	4.17	0.00***
GFC	6.96	3.93	0.00***

*****, ** And * Stand for Significance at the 1%, 5% And 10% Levels, Respectively**

Table 8 shows that FDI, TR and GFC were statistically significant at the 1% level. If FDI increases by 1%, IND will decrease by 1.53% in the long run. In addition, a 1% increase in TR will lead to a 5.42% increase in IND levels in the long run. Regarding GFC, a 1% increase will lead to a 6.96% increase in IND levels in the long run.

Table 9: PARDL Short Run Results.

Variable	Coefficient	t-statistic	Probability
Cointegrating equation	-0.15	-5.22	0.00***
GDPC	0.02	1.99	0.04**

*****, ** And * Stand for Significance at the 1%, 5% And 10% Levels, Respectively**

Table 9 shows that only GDPC was statistically significant at the 5% level. A 1% increase in GDPC leads to a 2% increase in IND levels in the short run.

4.9. Post Estimation Tests

4.9.1. Heteroskedasticity Tests

To test for heteroskedasticity, the Breusch-Pagan Godfrey test was used. The p-value of 0.26 was greater than 0.05, hence, it was concluded that there was no heteroskedasticity.

5. DISCUSSION OF FINDINGS

The PARDL research findings prove that FDI is negatively associated with IND. The overall aim of the study was to ascertain the relationship between FDI and IND. These research findings answer the overall objective of the study. These research findings are in line with the research outcome of [13,54,28]. These findings can be explained that at times FDI targets one sector only, for example, oil extraction. Therefore, the industrialization levels will remain low because the manufacturing sector of an economy remains without any injection of FDI.

In addition, foreign firms will have more bidding power with contracts, and this may affect infant domestic industrial players and reduce productivity and profits, as well [55]. Finally, these research findings can be supported because some of the ECOWAS economies fail to create a conducive environment for attracting FDI. For example, Nigeria has suffered political instability due to Boko Haram attacks, Niger went through a coup d'état in 2023, Burkina Faso has an armed conflict against Ansaroul Islam, and Mali is experiencing political upheaval [24,55]. Therefore, such environments are not conducive to attracting FDI nor positively impacting industrialization.

GFC was another factor having a positive effect on improving industrialization in the long-run. These research findings agree with the views of [42,41]. The results of the study, therefore, implies that when economies improve their road and railway infrastructures, it leads to improved industrialization levels in the future. This is justified by all goods from the productive sectors of an economy that must be transported by road and rail, the common modes of transport, especially in ECOWAS. Long term, ECOWAS must prioritize TR and increase GFC levels to attain better industrialization levels.

In the short run, it was established that GDPC positively affects industrialization. These research findings can be justified that the big push theory assumes industrialization requires a large demand expansion, which serves as an entrepreneurial incentive to incur the fixed costs associated with it [57,58]. Therefore, industrialization will probably benefit from any element that increases market access and stimulates demand. Demand may be stimulated by an increase in per capita income [59, 60,58].

5.1. Policy Recommendations

This section presents the policy implications of the findings. It is crucial for ECOWAS to address the low industrialization challenges it faces. This is necessary to improve the industrialization levels of the region. The long-term impact will be the attainment of different sustainable development goals. Apart from that, addressing industrialization challenges will enable the ECOWAS region to flourish and solve some macro-economic challenges.

5.2. Trade Policies

ECOWAS needs to formulate and implement robust trade policies that help to improve the industrialization levels. These policies should be tailor-made to meet realistic targets, and such policies must be reviewed periodically. This is

important to capture the changes that occur in the regional and global village generally.

5.3. Increased Investment in Gross Fixed Capital

There is a need for the ECOWAS region to increase its investment in infrastructure development. This is key for industrialization is that products from the industrial sector must be transported either by road or by railway. To add more, such increased investment helps to facilitate different economic activities.

5.4. Suggestions For Future Research

The study examined the relationship between foreign direct investment (FDI) and industrialization in the ECOWAS trading bloc; any endogeneity may not have been completely eradicated. However, to address this issue, lagged variables were used. Future research may consider the use of the generalized method of moments to effectively address unresolved endogeneity issues.

6. CONCLUSION

This study aimed to examine the link between FDI and industrialization in the ECOWAS region. Low FDI and industrialization levels affected the region between 1975 to 2021. Research findings indicated that there was no panel cointegration among the variables. From the study, it was established that FDI adversely affects industrialization. Regarding causality, it was established that FDI did not influence industrialization and vice versa. In the short run, it was observed that GDP per capita positively influenced industrialization levels in the ECOWAS region. In the long term, trade and gross fixed capital formation positively impact industrialization levels. These findings imply that ECOWAS needs to prioritize trade, gross fixed capital investments, and increasing GDP per capita to improve industrialization levels. Based on these research findings, it can be concluded that ECOWAS member states must formulate and implement robust trade policies and create a conducive environment to achieve high industrialization levels.

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